AMENDMENTS TO THE CLAIMS:

This listing of claims replaces all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method for synchronizing a base station to a mobile station, comprising:

transmitting a signal sequence K(i) of length n from the base station to the mobile station, the signal sequence K(i) being formed by ~~comprising~~:

repeating, n1 times, a second signal sequence element K2(k) of length n2 to form a second signal sequence ~~repeated n1 times~~, the second signal sequence being ~~and a~~ modulated with first signal sequence ~~element~~ elements K1(j) of length n1;

wherein n1 is equal to n2, and i, j and k are integers[[,]] ~~and the signal sequence K(i) is determined in the mobile station~~.

2. (Currently Amended) The method ~~as claimed in~~ of claim 1, wherein n is equal to 256, n1 is equal to 16, and n2 is equal to 16.

3. (Currently Amended) The method ~~as claimed in~~ of claim 1, further comprising forming the signal sequence K(i) by modulating the second signal sequence ~~K2(k)~~ as follows: K(i) = K2 (i mod n2) * K1 (i div n2).

4. (Currently Amended) The method ~~as claimed in~~ of claim 1, further comprising:

receiving, at the mobile station, a received signal sequence E(1), ~~wherein~~ the signal sequence K(i) ~~is~~ being contained in ~~a~~ the received signal sequence E(1), the signal sequence K(i) being ~~and is~~ determined in the mobile station by ~~establishing~~ obtaining a correlation ~~sums~~ sum S of the signal sequence K(i) with corresponding sections of the received signal sequence E(1)[[,]];

wherein the mobile station determines the correlation sum S by:

determining a partial correlation sum sequence TS(z) of the second signal sequence ~~element K2(k) being determined~~ using corresponding parts of the received signal sequence E(1)[[,]]; ~~and~~

selecting n1 elements of the partial correlation sum sequence TS(z); and ~~being selected in order to calculate the correlation sum S and being multiplied~~

multiplying selected elements of the partial correlation sum sequence TS(z) by ~~the~~ first signal sequence ~~element~~ elements K1(j).

5. (Currently Amended) The method ~~as claimed in~~ of claim 4, wherein selecting the n1 elements comprises ~~further comprising~~ selecting n1 in each of n2-th elements of the partial correlation sum sequence TS(z) ~~in order to calculate the correlation sum S~~.

6. (Currently Amended) The method ~~as claimed in~~ of claim 9 ~~1~~, further comprising:

receiving, at the mobile station, a received signal sequence E(1), ~~wherein,~~ the signal sequence K(i) ~~is~~ being contained in ~~a~~ the received signal sequence E(1), the signal sequence K(i)

being ~~and is~~ determined in the mobile station by ~~establishing~~ obtaining a correlation sums S of the signal sequence K(i) with corresponding sections of the received signal sequence E(1)~~, and;~~

wherein the mobile station determines the correlation sum S by:

~~wherein~~ determining a partial correlation sum sequence TS(z) for first signal sequence elements ~~of the signal sequence~~ K1(j) ~~is determined~~ using selected elements of the received signal sequence E(1)[[,]]; and

multiplying n2 elements of the partial correlation sum sequence TS(z) ~~are multiplied~~ by ~~the~~ second signal sequence elements ~~element~~ K2(k) ~~in order to calculate the correlation sum S~~.

7. (Currently Amended) The method ~~as claimed in~~ of claim 6, further comprising selecting n1 in each of n2-th elements of the received signal sequence E(1) in order to calculate a partial correlation sum TS.

8. (Currently Amended) The method ~~as claimed in~~ of claim 9 [[4]], further comprising:

storing partial correlation sums TS in the mobile station; and

using the partial correlation sums in order to determine a further correlation sum S.

9. (New) The method of claim 1, further comprising:

determining, in the mobile station, the signal sequence K(i) using information about the first signal sequence element K1(j) and the second signal sequence element K2(k).

10. (New) A base station for transmitting a synchronization sequence to synchronize the base station and a mobile station, the synchronization sequence being obtained by:

repeating, n1 times, a second signal sequence element K2(k) of length n2, the second signal sequence element K2(k) being modulated with a first signal sequence element K1(j) of length n1, where n1 and n2 are equal, and j and k are integers.

11. (New) A mobile station that uses a synchronization sequence for synchronizing a base station and the mobile station, the synchronization sequence being obtained by:

repeating, n1 times, a second signal sequence element K2(k) of length n2, the second signal sequence element K2(k) being modulated with a first signal sequence element K1(j) of length n1, where n1 and n2 are equal, and j and k are integers.

12. (New) A memory that stores a signal sequence K(i) of length n, the signal sequence K(i) being determined by:

repeating, n1 times, a second sequence element K2(k) of length n2; and

modulating a first sequence element K1(j) of length n1 into repeated second sequence elements K2(k);

wherein n1 is equal to n2, and i, j and k are integers.